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GB 2025795A
GB 1563450
GB 1515464
GB 1338761
GB 1251255
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(71) Applicant
Harpsound Limited,
Sheepcote Manor
Wooburn Common Road,
Wooburn Common,
Buckinghamshire,
HP10 0JS
(72) Inventor
William Rutherford
Matthew McNeary
(74) Agents
D. Young & Co.,
10 Staple Inn, London,
WC1V 7RD

(54) Vibratory Screen for Vibratory Screening Apparatus

(57) A screen for vibratory screening apparatus comprises a woven mesh of polyaramide yarn preferably enveloped in a sheathing of polyester, which is applied by braiding or winding polyester fibres round the yarn and then fusing them to form a continuous sheathing.

SPECIFICATION

Vibratory Screen for Vibratory Screening Apparatus

This invention relates to vibratory screens for vibratory screening apparatus, and vibratory screening apparatus comprising them.

Vibratory screening apparatus is well known and is used in many applications including in particular earth drilling and mining operations. One such application is in the screening of drill cuttings from subterranean and submarine drilling operations for the recovery of the drilling fluid and separation of the drill cutting. Typically such apparatus comprise a wire mesh screen, usually of stainless steel, mounted in a frame mounted for reciprocating movement on a base, and provided with eccentric means for reciprocating or vibrating the screen.

Depending on the materials being screened, the mesh and wire size of the screen itself, the frequency and amplitude of vibration, the life of stainless steel mesh screens used in the mining and oil drilling industries may be anything from a few hours to a few weeks, but rarely in excess of 6 or 7 weeks. This, of course, represents a considerable disadvantage both in terms of cost of replacement and shut-down time of the screening unit.

According to the invention a screen is provided for a vibratory screening unit having a substantially greater life than a conventional stainless steel mesh screen, such a screen comprising as the screening surface a woven mesh of polyaramide filaments or fibres which are preferably enveloped in a protective sheath of polyester. In addition to having a substantially longer working life, the polyaramide screens of the invention are much lighter in weight than stainless steel screens and therefore much more economic in terms of transportation and operation and operation e.g. power, costs.

High strength, high modulus polyaramide (aromatic polyamide) spun fibre yarns have recently been developed and are available from du Pont under the Registered Trade Mark: Kevlar, e.g. Kevlar 29 and Kevlar 49. Woven screens of such polyaramide fibre yarns, such as are proposed within the broad scope of this excess of that provided by an equivalent mesh stainless steel wire screen, but are subject to some disadvantage in that the polyaramide fibre yarns are subject to flattening in use with consequent variation in the dimensions of the mesh opening.

Accordingly in a further and preferred aspect of the present invention, the polyaramide filaments or fibre yarns of the woven mesh are enveloped in a protective sheath of polyester e.g. polyethylene terephthalate. This may be in the form of a continuous polyester sheath around the polyaramide filament or fibre yarn but is preferably in the form of a spun polyester fibre yarn, e.g. that sold under the Registered Trade Mark Dacron, wrapped around the polyaramide filament fibre yarn and forming a wound or braided outer casing thereon. More preferably, after winding or braiding around the polyaramide filament or fibre yarn, the polyester is heated to fuse the polyester to the surface of the polyaramide.

Claims

1. A screen for use in vibratory screening apparatus comprising as the screening surface a woven mesh of aromatic polyamide filament or fibre yarn.

2. A screen according to claim 1, wherein the screening surface is a woven mesh of a spun aromatic polyamide fibre yarn.

3. A screen according to claim 1 or 2, wherein the aromatic polyamide filaments or fibre yarn forming said woven mesh is or are enveloped in a protective sheathing of polyester.

4. A screen according to Claim 3, wherein said protective sheathing is formed by a spun polyester fibre yarn wound or braided around the aromatic polyamide filament or fibre yarn.

5. A screen according to Claim 4, wherein, after winding or braiding, the wound or braided polyester fibre yarn forming said protective sheath around the aromatic polyamide filament or yarn is heated to form a fused polyester sheath.

6. A vibratory screening unit incorporating a screen as claimed in any of the preceding claims.

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